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Sub-Committee of Experts on the Transport of Dangerous Goods

Forty-fifth session
Geneva, 23 June – 2 July 2014
Item 2 (d) of the provisional agenda
Explosives and related matters: review of packing instructions for explosives

Review of packing instructions for explosives

Transmitted by the Sporting Arms & Ammunition Manufacturers' Institute (SAAMI)[1]

Introduction

1. At the forty-third session of the Sub-Committee, SAAMI submitted ST/SG/AC.10/C.3/2013/18. SAAMI sought a clarifying amendment that when metal packagings are not allowed by PP48, packaging components representing a minimal percentage of the overall package can still be metal. The intent was to allow light weight lids of sheet metal on plastic packages for UN 0509. The discussion was summarized in the report of the Working Group on Explosives in paragraph 12 of informal document INF.61/Rev.1. The working group agreed with the proposal in principle.

2. While discussing the SAAMI proposal to adopt a specific solution, an inconsistency was noted between the English and French languages in packing instruction 114(b), specifically that plastic was allowed in the French edition but not in the English edition. As the biennium was continuing, it was decided to postpone action until the inconsistency could be studied and resolved. The Sub-Committee's summary appears in paragraph 25 of the report, ST/SG/AC.10/C.3/86: "SAAMI will return with a proposal at the forty-fifth session. The Sub-Committee agreed that the English text of P114(b) should be corrected to allow the use of plastics receptacles as inner packagings (see annex III).", and in Annex III

[1] In accordance with the programme of work of the Sub-Committee for 2013–2014 approved by the Committee at its twenty-sixth session (see ST/SG/AC.10/C.3/84, para. 86 and ST/SG/AC.10/40, para. 14).

"Chapter 4.1, 4.1.4.1, P114 (b), under "Inner packagings", "Receptacles" – Insert "Plastics"."

3. The discovery of the inconsistency led the Chair and members of the Working Group on Explosives to study and compare the packing instructions. This has resulted in the identification and proposed resolution of sixteen additional differences between the French and English language versions, mostly in favour of the French edition. For efficiency, SAAMI is including all the suggested changes in this current proposal.

Discussion

4. Based on discussion in the Working Group on Explosives, SAAMI amends its original proposal so that, instead of a new packing provision, it will now add one additional sentence to PP48 in packing instruction 114(b). The entire packing provision would now read: "PP 48: For UN Nos. 0508 and 0509, metal packagings shall not be used. Packagings of other material with a small amount of metal, for example metal closures, are not considered metal packagings."

5. It appears that similar changes to the two other packing instructions which use PP48, i.e. P112(c) and P406, would also be in order to keep the regulations consistent.

6. A table of the inconsistencies identified in the packing instructions follows:

Packing Instruction:	*Applies to Type of Product & Affected UN Nos.*	*Difference & Analysis:*
P112(a)	Detonating solids (Solid, wetted, 1.1D)	'Bags, plastics' as inner packagings are mentioned in the French version but not in the English
	0004, 0072, 0076, 0078, 0118, 0133, 0146, 0150, 0151, 0154, 0214, 0215, 0219, 0220, 0226, 0266, 0282, 0340, 0391, 0394, 0401	▪ "Bags, plastics" appears in 15th Rev. but not in 16th Rev.
		▪ No changes to P112(a) were noted in ST/SG/AC.10/36/Add.1, so removal appears unintentional.
		▪ The English version should be amended accordingly.
P114(a)	Deflagrating solids (Solid, wetted)	"Bags, textile" as inner packagings are mentioned in the French version but not in the English
	0077, 0132, 0234, 0235, 0236, 0342	▪ "Bags, textile" appears in 16th Rev. but not in 17th Rev.
		▪ No changes to P114(a) affecting "Bags, textile" were noted in ST/SG/AC.10/38/Add.1, so removal appears unintentional.
		▪ The English version should be amended accordingly.

Packing Instruction:	*Applies to Type of Product & Affected UN Nos.*	*Difference & Analysis:*
		"Bags, textile, plastics coated or lined" as intermediate packagings are mentioned in the French version but not in the English ▪ "Bags, textile, plastics coated or lined" appears in 16th Rev. But not in 17th Rev. ▪ No changes to P114(a) affecting "Bags, textile, plastics coated or lined" were noted in ST/SG/AC.10/38/Add.1, so removal appears unintentional. ▪ The English version should be amended accordingly.
P116	Blasting explosives 0077, 0132, 0234, 0235, 0236, 0342	"Receptacles, wood, sift-proof" as inner packagings are mentioned in the French version but not in the English ▪ "Receptacles, wood, sift-proof" appears in 16th Rev. but not in 17th Rev. ▪ No changes to P114(a) affecting "Receptacles, wood, sift-proof" were noted in ST/SG/AC.10/38/Add.1, so removal appears unintentional. ▪ The English version should be amended accordingly. A line break should be inserted in the French version of P116 between "en papier, resistant à l'eau" and "en papier parafiné" for "Feuilles" as "Emballages intérieurs" ▪ This error predates 14th Rev. It is obviously an unintentional error in formatting. ▪ The French version should be amended accordingly.
P131	Detonators (electric/ non-electric/ assemblies) 0029, 0030, 0255, 0267, 0360, 0361, 0455, 0456, 0500	The word "Receptacles" (in bold print) should be inserted between the words 'plastics' and 'fibreboard' in the column Inner packagings under the heading "Bags" ▪ The sub-heading "Receptacles" appears in 16th Rev. but not in 17th Rev. ▪ No changes to P131 affecting the sub-heading "Receptacles" were noted in ST/SG/AC.10/38/Add.1, so removal appears unintentional.

Packing Instruction:	*Applies to Type of Product & Affected UN Nos.*	*Difference & Analysis:*
		In the column Outer packagings move the line "plastics, solid (4H2)" to the last line of Boxes (to be consistent with the rest of the instructions) ▪ 4H2 added in 18th Rev. by ST/SG/AC.10/40/Add.1. Positioning within the list was not specified.
P134	Cartridges (oil well and power device) + cable cutters + fracturing/release / sounding devices + explosive rivets 0070, 0099, 0173, 0174, 0204, 0275, 0276, 0277, 0278, 0296, 0323, 0374, 0375, 0381	"Receptacles, fibreboard" as inner packagings are mentioned in the French version but not in the English ▪ "Receptacles, fibreboard" appears in 16th Rev. but not in 17th Rev. ▪ No changes to P134 affecting "Receptacles, fibreboard" were noted in ST/SG/AC.10/38/Add.1, so removal appears unintentional. ▪ The English version should be amended accordingly.
P135	Pyrotechnic articles 0049, 0050, 0054, 0092, 0093, 0191, 0192, 0193, 0194, 0195, 0196, 0197, 0312, 0313, 0333, 0334, 0335, 0336, 0337, 0373, 0403, 0404, 0405, 0418, 0419, 0420, 0421, 0428, 0429, 0430, 0431, 0432, 0487, 0492, 0493, 0503, 0505, 0506, 0507	The word "Receptacles" (in bold print) should be inserted between the words "plastics' and 'fibreboard" in the column Inner packagings under the heading "Bags" ▪ The sub-heading "Receptacles" appears in 16th Rev. But not in 17th Rev. ▪ No changes to P135 affecting the sub-heading "Receptacles" were noted in ST/SG/AC.10/38/Add.1, so removal appears unintentional.
P136	Cases, cartridge, empty + cases, combustible, empty 0055, 0379, 0446, 0447	The word "Boxes" (in bold print) should be inserted between the words "textile" and "fibreboard" in the column Inner packagings under the heading "Bags" ▪ The sub-heading "Boxes" appears in 16th Rev. but not in 17th Rev. ▪ No changes to P136 affecting the sub-heading "Boxes" were noted in ST/SG/AC.10/38/Add.1, so removal appears unintentional. Change the word "portions" to "partitions" in the column of Inner packagings ▪ The notation was moved from P136 "additional requirements" in the 11th Rev. to P136 "inner packagings" in the 12th Rev. When the move occurred, the word "Partitions" inadvertently became "portions".

Packing Instruction:	*Applies to Type of Product & Affected UN Nos.*	*Difference & Analysis:*
P137	Charges, shaped + charges, explosive, commercial 0059, 0439, 0440, 0441, 0442, 0443, 0444, 0445	In the column Outer packagings move the line "plastics, solid (4H2)" to the last line of Boxes (to be consistent with the rest of the instructions) ▪ 4H2 added in 18th Rev. by ST/SG/AC.10/40/Add.1. Positioning within the list was not specified.
P139	Cord, detonating 0065, 0102, 0104, 0289, 0290	'Receptacles, fibreboard' as inner packagings are mentioned in the French version but not in the English ▪ "Receptacles, fibreboard" appears in 16th Rev. but not in 17th Rev. ▪ No changes to P139 affecting "Receptacles, fibreboard" were noted in ST/SG/AC.10/38/Add.1, so removal appears unintentional. ▪ The English version should be amended accordingly. Under "Sheets", "paper" is mentioned in the English version where the French version specifies "paper, kraft" ▪ The English version as far back as the 11th Rev has simply stated "paper". "Kraft paper" is more specific, but there appears to be no need for that specificity. ▪ The French version should be amended accordingly to delete "kraft".
P143	Charges, propelling 0271, 0272, 0415, 0491	▪ "Trays, fitted with dividing partitions, wood" as inner packagings are mentioned in the French version but not in the English ▪ "Trays, fitted with dividing partitions, wood" appears in 16th Rev. But not in 17th Rev. ▪ No changes to P143 affecting "Trays, fitted with dividing partitions, wood" were noted in ST/SG/AC.10/38/Add.1, so removal appears unintentional. ▪ The English version should be amended accordingly.

Packing Instruction:	*Applies to Type of Product & Affected UN Nos.*	*Difference & Analysis:*
P144	Contrivances, water activated 0248, 0249	"Receptacles, plastics" as inner packagings are mentioned in the French version but not in the English ▪ "Receptacles, plastics" appears in 16th Rev. But not in 17th Rev. ▪ "Receptacles, wood" were added as inner packagings in the 17th Rev, but no changes to P144 affecting "Receptacles, plastics" were noted in ST/SG/AC.10/38/Add.1, so removal appears unintentional. ▪ The English version should be amended accordingly.

7. SAAMI notes with appreciation the work of the Chair of the Explosives Working Group, Belgium, IME and other members who made contributions to this proposal.

Proposal

8. Modify packing provision 48 in packing instruction 114(b) to read:

"PP 48: For UN Nos. 0508 and 0509, metal packagings shall not be used. Packagings of other material with a small amount of metal, for example metal closures, are not considered metal packagings."

9. For P112(c) and P406, also add the same second sentence to PP48. "...Packagings of other material with a small amount of metal, for example metal closures, are not considered metal packagings."

10. Modify the packing instructions as follows:

In the English Edition, in the order of the French Edition:

10a) In P112(a) – under the heading "Inner packagings", under the sub-heading "Bags", insert "plastics" above "textile"

10b) In P114(a) – under the heading "Inner packagings", under the sub-heading "Bags", insert "textile" above "woven plastics"

10c) In P114(a) – under the heading "Intermediate packagings", under the sub-heading "Bags", insert "textile, plastics coated or lined" below "plastics"

10d) In P116 – under the heading "Inner packagings", under the sub-heading "Receptacles", insert "wood, sift-proof" below "plastics"

10e) In P131 – under the heading "Inner packagings", under the sub-heading "Bags", the sub-heading "Receptacles" is missing and should be inserted in bold print between the words "plastics" and "fibreboard"

10f) In P131 - under the heading "Outer packagings", under the sub-heading "Boxes", move the line "plastics, solid (4H2)" to the bottom of the list (to be consistent with the rest of the instructions)

10g) In P134 – under the heading "Inner packagings", under the sub-heading "Receptacles", insert "fibreboard" above "metal"

10h) In P135 – under the heading "Inner packagings", under the sub-heading "Bags", the sub-heading "Receptacles" is missing and should be inserted in bold print between the words "plastics" and "fibreboard"

10i) In P136 – under the heading "Inner packagings", under the sub-heading "Bags", the sub-heading "Boxes" is missing and should be inserted in bold print between the words "textile" and "fibreboard"

10j) In P136, under the heading "Inner packagings", change the word "portions" to "partitions"

10k) In P137, under the heading "Outer packagings", under the heading "Boxes", move the line "plastics, solid (4H2)" to the last line, to be consistent with the rest of the instructions

10l) In P139, under the heading "Inner packagings", under the sub-heading "Receptacles", insert "fibreboard" above "metal"

10m) In P143, under the heading "Inner packagings", under the sub-heading "Trays, fitted with dividing partitions, insert "wood" below "plastics"

10n) In P144, under the heading "Inner packagings", under the sub-heading "Receptacles", insert "plastics" between "metal" and "wood"

In the French Edition:

10o) In P116 – under the heading "Emballages intérieurs" (Inner packagings), under the sub-heading "Feuilles" (Sheets), a line break should be inserted between the two entries "en papier, resistant à l'eau" and "en papier parafiné"

10p) In P139, under the heading "Emballages intérieurs" (Inner packagings), under the sub-heading "Feuilles" (Sheets), change "en papier, kraft" to "en papier" (from "paper, kraft" to "paper")

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Sub-Committee of Experts on the Transport of Dangerous Goods

Forty-fifth session
Geneva, 23 June – 2 July 2014
Item 4 (c) of the provisional agenda
Listing, classification and packing: miscellaneous

Neutron radiation detectors – minor amendments

Transmitted by the Dangerous Goods Advisory Council (DGAC)[1]

Introduction

1. This document seeks to resolve a difficulty with the requirements in the final paragraph of SP373 as they pertain to small radiation detection systems (i.e., with 1 gram or less of boron trifluoride per detector). SP373 was adopted for inclusion in the eighteenth revised edition, on the basis of ST/SG/AC.10/C.3/2012/60 (and Corr.1). It covers the transport of neutron radiation detectors and detection systems containing small amounts of boron trifluoride at low pressures and in high integrity containment devices (radiation detectors).

2. Implementation of the SP373 has identified a difficulty relating to the transport of small radiation detection systems with 1 gram or less boron trifluoride per detector, as the requirements apply to existing equipment. These small detection systems are commonly portable devices. They are essential for purposes of radiation safety and security. Based on prior competent authority advice, they have historically been transported as not subject to the Regulations. Such transport has been without incident involving the toxic gas for more than 70 years. There is a need for some users to transport them in emergency situations.

3. As SP373 was written, the following requirement in subparagraph (c)(ii) applies to these small detection systems:

[1] In accordance with the programme of work of the Sub-Committee for 2013–2014 approved by the Committee at its twenty-sixth session (see ST/SG/AC.10/C.3/84, para. 86 and ST/SG/AC.10/40, para. 14).

"The housing shall contain sufficient absorbent material to absorb the entire gas contents."

4. Adsorbent material would normally be placed in the detection system housing at the time of manufacture. Detection systems containing detectors with 1 gram or less of boron trifluoride have been in use for approximately 70 years and these detection systems currently in use do not include adsorbent material. Inclusion of adsorbent material in the housing of existing systems by users introduces practical problems. Considering the small amount of gas, the integrity of the systems, and the prior safety record, it is proposed that adsorbent material not be required for detection systems containing detectors with 1 gram or less of boron trifluoride.

5. **Editorial correction.** While the text in (b) (i) and (c) (ii) refers to "absorbent", the material used "adsorbs" boron trifluoride. It is recommended that these subparagraphs be editorially amended accordingly.

Proposal

6. On the basis of the above, it is proposed that the text in SP 373 be revised as follows:

(a) Revise subparagraph (b) (i) by replacing the words "absorbent" and "absorb" with "adsorbent" and "adsorb", respectively.

(b) Revise subparagraph (c)(ii) by replacing the words "absorbent" and "absorb" with "adsorbent" and "adsorb", respectively.

(c) Revise the final paragraph in SP373 to read as follows:

Neutron radiation detectors containing not more than 1 gram of boron trifluoride, including those with solder glass joints, are not subject to these Regulations provided they meet the requirements in subparagraphs (a) and are packed in accordance with paragraph (b). Radiation detection systems containing such detectors are not subject to these Regulations provided they are packed in accordance with subparagraphs (c)(i) and (iii). Packing instruction P200 of 4.1.4.1 is not applicable."

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Item 2 (c) of the provisional agenda
Explosives and related matters: miscellaneous

Classification of articles under UN No. 0349

Transmitted by the expert from Italy[1]

Introduction

1. Paragraph 2.1.2.1.1 of the Model Regulations on the Transport of Dangerous Goods states that the 1.4S classification code can be assigned in case of:

> " ..... *Substances or items packed in such a way as to confine any dangerous explosive effect, caused by an accidental operation, within the package itself, therefore those items or materials can be assigned the 1.4S classification code.*

2. The national Competent Authority in Italy has received requests in order to assign UN number 0349 ARTICLES, EXPLOSIVE, N.O.S with the 1.4S classification code, to items originally classified as UN 0279 CHARGES PROPELLING FOR CANNON, 1.1C but enclosed in an adequate packaging, designed and built in order to pass the test procedure as requested by the Test series 6 (Manual of Tests and Criteria, ST/SG/AC.10/11/Rev.5).

3. Such procedure, even if conducted under the control and the authorization of the Competent Authority, as required by the special provision 178 of Chapter 3.3 applicable to UN 0349, and in compliance with the classification procedure, as required by special provision 347, raises feasibility doubts; for instance it would entail, as a direct and

[1] In accordance with the programme of work of the Sub-Committee for 2013-2014 approved by the Committee at its sixth session (refer to ST/SG/AC.10/C.3/84, para. 86 and ST/SG/AC.10/40, para. 14).

immediate consequence, the non-applicability of the security provisions, as UN 0349 is not included in the list of goods subject to the requirements of Chapter 1.4.

4. For some articles or substances listed in Dangerous Goods List (Chapter 3.2), with a specific name and classification, there is already a procedure for the 1.4S classification code assignment, provided that the article or substance is contained in an adequate packaging. For instance, an article assigned to UN 0030 MINE ELECTRIC DETONATOR 1.1B, which meets the SP 347 requirement, can be re-assigned to UN 0456 MINE ELECTRIC DETONATOR 1.4S, because in that specific packaging the original detonator does not cause any dangerous explosive effects. Given that the article itself still holds an intrinsic hazard due to possible misuse, the same number is included in the list of high consequence dangerous goods, section 1.4.3 (Security) "*Provisions for high consequence dangerous goods*".

5. In order to extend such procedure, two new UN numbers, respectively for articles or substances, to be used under the control of the Competent Authority, could be included in the Dangerous Goods List (Chapter 3.2).

6. For this purpose, the expert from Italy is proposing the topic for discussion by the Sub-Committee, in order to verify the feasibility of the above mentioned procedure and to this end suggests the amendments as proposed below.

Proposal

7. Add to the list of dangerous goods (Chapter 3.2 Chart) two new numbers named as follows:

UN 0XXX ESPLOSIVES SUBSTANCES N.O.S.	1.4S	SP 178, SP 274, SP 347
UN 0XXY ESPLOSIVES ARTICLES N.O.S.	1.4S	SP 178, SP 274, SP 347

8. Add the two new UN numbers in Table 1.4.1 (Indicative list of high consequence dangerous goods)

Justification

9. Simplification of procedure for the classification and assignment of the UN number.

n.o.s entry) that reflected all hazards posed by the substance and related transport conditions. It was recognized that if new data on the dangerous properties of a product mentioned by name identified additional hazards, the new data should be submitted, using the form in Figure 1 of the Recommendations, for the Sub-Committee to decide on a new classification and the appropriate transport conditions. **ICCA was requested to prepare a text for the Guiding Principles to indicate the procedure to be followed until the classification was updated, particularly when there were differences between the labelling for transport and the labelling required under other regulations.**

Note: since CEFIC submitted INF.15, it is CEFIC and not ICCA who should have been reported.

2. Based on this text highlighted above the following proposals have been developed. There are 2 possibilities to add text to the guiding principles: in Part 2 and in Part 3. For both Parts a proposal has been developed, but only one should be implemented.

3. The new proposal is based on the discussion we had in December and on the fact that there have been changes to substances listed by name in the past and there was no interim classification for these substances, although the additional classes discussed were class 6.1 and class 8. Therefore CEFIC sees no need to have an interim solution. The substances listed by name have all been listed for many years and the classifications and the transport conditions have proven to be safe.

4. Beside this it is questionable whether all hazards need to be communicated for transport. It seems that there is a principle of "Precedence of hazards", which is applied in transport to avoid numerous labels, which may confuse the people involved in a transport. In most cases the number of classes is limited to 3. If this principle would no longer apply, a huge number of new UN numbers would need to be generated to cover all possible combinations of classes.

5. The comments in the proposed text regarding the examples need not to be taken into the final text, but have been added to explain the examples. The examples shall only show that the assignment of a class / division or the packing group is not always based on the strict application of the classification criteria, but that other aspects are taken into consideration. This leads to stricter or less strict assignment. **There is NO request to change any of these classifications or a judgement on the classification and assigned packing groups.**

6. Similar text may be needed in the Model Regulations, combined if needed with some theoretical examples.

Proposal

7. In the part 2 "Classification" of the "Guiding principles for the development of the UN model regulations", after the following text,

...

8. When these definitions are used with the list of proper shipping names for dangerous goods, they provide guidance to those who are responsible for classifying substances; and a notable degree of standardization while retaining a flexibility that allows diverse situations to be taken into account. Classifications for substances in the Model Regulations are made on the basis of consideration of data submitted to the Sub-Committee of Experts on the Transport of Dangerous Goods by governments, intergovernmental organizations and other

international organizations in the form recommended in Figure 1. However the actual data submitted are not formally endorsed by the Sub-Committee.

...

add:

The substances and articles listed by name in column 2 of the list shall be transported as listed, according to their classification in the list, unless and until the subcommittee of experts on TDG provides an updated list, based on new or additional data provided by TDG experts (e.g. National authorities, Industry stakeholders). A class or a packing group may have been assigned to describe the transport conditions rather than to reflect the classification. For products having more than two hazards, normally the two predominant hazards need to be communicated only. In certain cases it may even be necessary to communicate just one hazard (e.g. explosives, self-reactive substances, pyrophoric liquids, etc.). The precedence of hazard characteristics should be taken from the precedence of hazard table (see chapter 2.0.3).

Examples for this are provided in the following:

UN1230 METHANOL, 3 (6.1), PG II

UN1547 ANILINE, 6.1, PG II

UN1577 CHLORODINITROBENZENES, LIQUID, 6.1, PG II

UN1578 CHLORONITROBENZENES, SOLID, 6.1, PG II

UN1590 DICHLOROANILINES, LIQUID, 6.1. PG III

UN1591 o-DICHLOROBENZENE, 6.1 PG III

UN1661 NITROANILINES, 6.1, PG II

UN1662 NITROBENZENE, 6.1, PG II

UN1663 NITROPHENOLS, 6.1, PG III

UN1671 PHENOL, SOLID, 6.1, PG II

UN1673 PHENYLENEDIAMINES, 6.1 PG III

UN1708 TOLUIDINES, LIQUID, 6.1, PG II

UN2023 EPICHLORHYDRINE, 6.1 (3), PG II

UN2078 TOLUENE DIISOCYANATE, 6.1, PG II

UN2311 PHENETIDINES, 6.1, PG III

UN2432 N, N-DIETHYLANILINE, 6.1, PG III

UN2474 THIOPHOSGEN, 6.1, PG I

UN2512 AMINOPHENOLS, 6.1, PG III

UN3409 CHLORONITROBENZENES, LIQUID, 6.1, PG II

UN3441 CHLORONITROBENZENES, SOLID, 6.1, PG II

UN3442 DICHLOROANILINES, SOLID, 6.1, PG II

UN3451 TOLUIDINES, SOLID, 6.1, PG II

UN3458 NITROANISOLE, SOLID, 6.1, PG III

UN3495 IODINE, 8 (6.1), PG III

SP 279: This substance is assigned to this classification or packing group based on human experience rather than the strict application of classification criteria set out in these regulations.

UN3268 SAFETY DEVICES, electrically initiated, 9

This entry applies to safety devices for vehicles, vessels or aircrafts, e.g. air bag inflators, air bag modules, ... which contains class 1 or other classes ... (see SP 280), but the transport conditions of class 9 have been applied by the UN Sub Committee of experts TDG (the test series 6(c) of Part 1 of the Manual of Test and Criteria has been used to show that no explosion of the device or no fragmentation of the device casing or pressure receptacle, and no projection hazard nor thermal effect which would significantly hinder fire-fighters or emergency respond efforts in the immediate vicinity takes place).

UN3480 LITHIUM ION BATTERIES, 9 and

UN3090 LITHIUM METAL BATTERIES, 9

The transport conditions described in class 9 are sufficient for a safe transport

UN2212 BLUE ASBESTHOS or BROWN ASBESTOS, 9, PG II

UN2315 POLYCHLORINATED BIPHENYLS, LIQUID, 9, PG II

UN2590 ASBESTOS CHRYSOTILE, 9, PG III

UN3432 POLYCHLORINATED BIPHENYLS, SOLID, 9, PG II

UN2729 HEXACHLOROBENZENE, 6.1, PG III

UN2730 NITROANISOLES, LIQUID, 6.1, PG III

These substances pose a chronic hazard to the health, but to guarantee the correct transport conditions, class 9 or 6.1 is assigned.